Abstract Details

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Author Biographies
Rick Kazman, founder of Namzak Labs, is an internationally renowned software engineering lecturer and researcher with 20+ years of experience. His software analysis methods have been adopted by dozens of Fortune 500 companies and government organizations. Dr. Kazman is the author of over 80 journal and conference papers and co-author of several books on software architecture.

Tony Cherot is a well-known business and technical consultant in government technology endeavors. Dr. Cherot has managed within government and industry bringing unique technological solutions to the business of government. Dr. Cherot heads the Namzak Labs federal government campaign.

WebArrow NMCI Paper Abstract

New Technologies to Enhance NMCI

1. The New Paradigm of Business Collaboration

1.1 Evolving business practices – from the pencil and letter to WebArrow

Modern business practices, beginning with the business letter and some form of post service, allowed business interaction where parties were located beyond convenient travel distance. The telegraph and phone have historically increased the efficiencies of business interactions, but not until fax and email, did technology allow distant parties to efficiently collaborate on business documents. However, this collaboration process is still inefficient especially if more that two people are to collaborate or if the collaboration is highly dynamic and iterative in nature. Furthermore, such things as version configuration

control and the appointment of a configuration manager are needed to reduce redundancy and the potentially destructive activities of the various participants.

1.2 How to achieve the business practice improvement with WA

By analyzing the requirements for contemporary business meetings and business conference calls, Namzak Labs has developed the ***WebArrow*** collaboration solution that defines a new paradigm of web-based business interaction. Much of business involves collaboration on a plan, a budget, or a briefing. One of the constraints that inhibit collaboration is the use of business tools that are not shared with all intended collaborators, thus reducing true collaboration to the *doers* and delegating to the periphery all others. Namzak Labs analyzed these business shortcomings and developed the ***WebArrow*** tool to support true active, real-time collaboration. ***WebArrow*** effectively reduces the space between people at remote locations who work together, and does so in a highly usable, secure, and reliable way.

2. Underlying Technology

The ***WebArrow*** architecture is organized around the concept of a "shareable": a resource that can be shared among people across the Internet. Voice over IP (VoIP) or video can be shared. Desktops can be shared. Web pages and files can be shared. Applications can be shared. And so forth.

For every shareable there are a number of ubiquitous concerns which are addressed by architectural services: managing sessions, connections, and users; providing appropriate security and licensing; providing appropriate performance; monitoring, queuing, billing, etc. Shareables can all be scripted, so that they can be easily tailored and integrated. Furthermore, shareables are all downloadable over the Web, which means that they can easily be updated "on the fly".

At run-time the WebArrow Session Manager controls all shareables. The session manager is the heart of the architecture, controlling the dynamics of a collaboration: starting and stopping shareables, deciding if and when to download components, communicating with other session managers, and managing all other services (security, queuing, logging, billing, web-page pushing, licensing, etc.). The session manager dynamically controls the behavior of other system components. So, for example, a collaboration might begin with chat, progress to include voice over IP, progress further to include desktop sharing, end the chat, start file sharing, progress further to include desktop annotations, change the participant who is sharing their desktop, and so forth. The potential combinations and styles of interactions are limitless.

In this way we can create custom collaboration solutions that are efficiently downloaded to a customer's computer, on demand.

3. *WebArrow* Advantages

WebArrow is able to provide unparalleled performance, robustness, usability, and security to the users within a collaboration. We achieve high performance by allowing our architecture to be configured in an endless variety of ways, and our Session Managers have the ability to alter this configuration on the fly, so that we can be continuously optimizing the service that a user receives.

WebArrow has been designed to run *robustly* in the unstable world of the Internet. Internet-deployed tools have to contend with bugs in operating systems and web browsers, as well as intermittent failures in the Internet itself. ***WebArrow*** has been architected to monitor failures in the underlying software and networking platform. In most cases, we can detect failures and repair them transparently to the user. In cases where repair is impossible (for example, due to network failure), ***WebArrow*** gracefully degrades the failed service, allowing other services to continue. In multiparty sessions, if one participant's computer or network fails, the other participants are able to continue without interruption.

WebArrow has been designed to be highly usable—a "dial tone" type of service that requires no training and no prior experience. Our products undergo extensive usability testing before release, and provide an intuitive, user-friendly environment that works first-time, every time.

And finally, and perhaps most importantly in these days of Internet worms and cyber-hackers: ***WebArrow*** provides state-of-the-art security, and does so with no performance penalty. All of ***WebArrow's*** data connections are encoded with a 192-bit encryption algorithm, guaranteeing that your private interactions remain private. Other collaboration tools provide up to 128-bit encryption, and even this level of encryption comes at an enormous performance penalty. Furthermore, all interactions with the system are password protected and our software respects and works with your organization's firewall, never compromising your security and privacy.